

# How We Now Know that Rheumatism is a Germ and Often Gets In Through Our Teeth

**Recent Experiments Show That It Is a Microbe Which Causes Rheumatic Aches and Pains and Swollen Joints and Ultimately Causes Death by Complications of the Heart**

By Dr. J. B. Huber.

**W**HAT community, what hamlet, has not its case of rheumatism, perhaps several such cases? Also, what community in the land has not its people who haven't the remotest idea of mouth cleanliness, are blind to the uses of a tooth brush and a mouth wash. Ninety per cent of us, that is ninety million Americans, have defective, germ-harboring teeth and jaws; and only eight per cent of our hundred millions or so have ever sat in a dentist's chair.

If the reverse were true, if ninety per cent of us were to keep our mouths, teeth, gums, tonsils and throats, properly clean, a good ninety per cent of our rheumatism would disappear. Gone then, practically all of them, from human view, would be those cases of men suffering with gnarled, deformed, creaking joints as here at of their naturally smooth and well lubricated surfaces as a piece of enameled iron that is rusting after the enamel has been removed; lame men with tortured expressions, complaining constantly of cricks in their backs, leaning heavily on their canes, sometimes on their crutches; gone would be those chronic rheumatics.

Through how many years since their first attack have they been swallowing gallons on gallons of rheumatism sure cures, have they been rubbing themselves or have been rubbed with every conceivable ointment, including those "good for man and beast." Teeth missing, most of them have, perhaps, with only here and there a brownish, yellow fang remaining. And the sockets that have become tiny cesspools, filled with all manner of disease-engendering material.

All this preamble is by way of emphasizing the relation there is between such unclean mouths and rheumatism. I mean here real rheumatism, such as is known to doctors as "rheumatic fever."

For rheumatic fever is an infectious, a germ disease, the germ in most cases getting to the joints and the other parts of the body affected in rheumatism, from unhealthy mouths and throats, by way of the body's blood and lymph channels.

## How We Incubate the Rheumatism Germ.

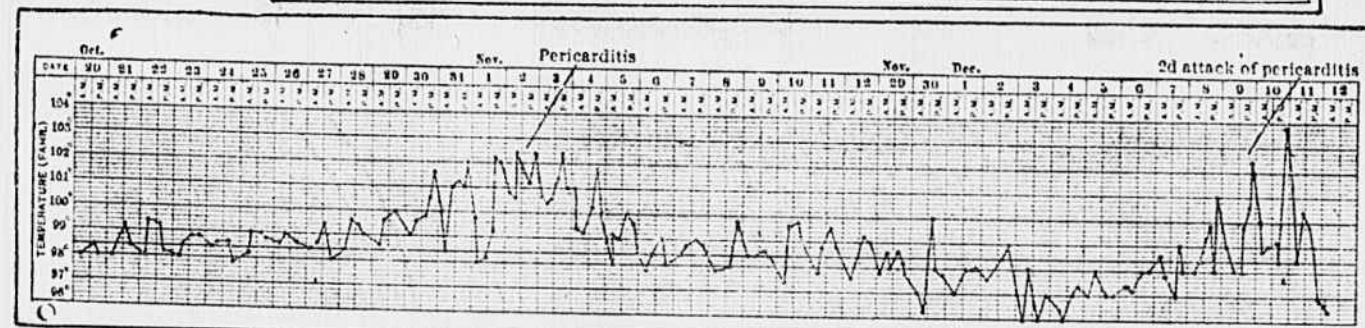
I am not here referring to a number of conditions which have been called rheumatism, largely because of the old and the mistaken idea that rheumatic joints are due to an unhealthy working of the bodily chemistry or to nervous disorders. In fact, the word rheumatism has become a convenient grab-bag into which to throw any ailment that is obscure and which presents swelling, redness, heat, pain and disability. People keep on speaking of rheumatism of the chest, which is really a neuralgia of the nerves running along the ribs; of rheumatism of the loins, which is really a neuralgia of the lumbar nerves; of muscular rheumatism, and so on.

But the real thing, real out and out bona fide rheumatism, that is, rheumatic fever, is a germ disease. This fact, which doctors long suspected, is now proved. More than a century ago doctors observed how often sufferers from sore throat, especially tonsillitis, came down while suffering thus or shortly after, with rheumatism. It has for many years been noticed, too, that rheumatism is liable, though of course not always, to come in epidemics, having in this respect the character of infectious diseases. Also that some cases of rheumatism were very severe, while others were mild, again recalling a property peculiar to infectious diseases. The doctors conjectured that rheumatism must be not only a germ disease, due to one specific germ, but that there may also be mixed infection in rheumatic fever.

Thus, for instance, tuberculosis is due essentially to the presence of the tubercle bacillus in the body; if this germ alone is active the disease is not nearly so serious as when pus and other virulent germs are added to the tubercle bacillus; the sufferer from such a mixed infection in tuberculosis, consumption, does very badly indeed. Similarly a rheumatic fever, in which only the specific germ would be present, would be not nearly so severe nor so liable to complications as a case in which other and perhaps more virulent bacteria would be present in the inflamed parts.

And, as stated, the culprit has now been apprehended; the germ of rheumatic fever has been isolated from between the teeth, from pus cavities around teeth, from the unhealthy tonsils, the sore throats, the blood, the heart valves and other tissues of people who have suf-

**Radiograph of a Hand Showing How the Rheumatic Inflammation Has Caused a Growth Around the Joints, Interfering with Circulation and the Use of the Member.**



**Temperature Chart of Patient Who Died from Heart Disease Caused by Rheumatic Fever. The Rheumatism Began on the 20th of October and Developed into a Case of Heart Affection on the First Three Days of November. The Fever Then Subsided Somewhat Until Early in December, When the Second Attack of Heart Involvement Began, and in Four Days the Patient Died—on December 12.—From "The Practice of Pediatrics," by Carr.**

fered or died of this disease. And cultures of this germ injected into animals have produced all the symptoms of rheumatic fever in those animals. The name of this germ is the streptococcus rheumaticus. Under the microscope a collection of this germ looks like a string of beads. (Coccus means a berry, in Greek; and streptos means a string.) By far the main area, the main portal of infection in the body, where this streptococcus lies in wait to enter the system, is the mouth; although there are other focuses of such infection—as the ear and the nose.

In 1898 two French physicians, Triboulet and Apert, produced rheumatic fever in a rabbit by an injection of a hitherto unrecognized streptococcus obtained from the blood of a patient with that disease. A year after, three German physicians, Westphal, Wassermann and Wolkoff, produced rheumatic fever in all of eighty rabbits by a germ having the same appearance and biological properties as was used by the French physicians.

And two years after, the English physicians, Payne and Poynton, isolated this germ from eight successive cases of rheumatic fever and demonstrated its presence post mortem in human organs that had been involved in the disease. In 1907 Dr. Vernon Shaw proved that monkeys are susceptible to the rheumatic infection by the injection of a culture of what is now known as the streptococcus rheumaticus, obtained on autopsy from a patient that had had rheumatic heart disease.

The distinguished English authority, Dr. R. Llewellyn Jones, in his book on rheumatism, emphasizes the matter of diet and also the relief gained by patients who visit the natural hot springs. One of the most valuable results of a course of baths at one of the natural hot springs is not only in relieving the disease at once, but in preventing after effects of heart disease, etc.

Of course, as in all infections, tuberculosis and the rest, rheumatic fever has its predisposing causes, which make the bodily tissues (joint, heart and so on) congenial soil for the streptococcus rheumaticus to grow and multiply and de-

velop the disease in. There is in some families a hereditary predisposition to rheumatism. Humidity and dampness and exposure to cold and to the elements are such predispositions; that is why man, the natural breadwinner, suffers rheumatic fever more than do women, nearly free to one time as much. Drivers, servants, bakers, sailors, laborers, suffer most. Many people prone to rheumatism suffer with the onset of inclement weather.

There is much rheumatic fever in February and March by reason of the predisposing changeable weather. Young adults very frequently become affected, and the first attack is very likely to be followed by others as the years roll on, until the pathetic condition of chronic rheumatism we have considered comes to pass. We seldom die of rheumatism. It isn't in itself a fatal disease, not often. We die rather of the complications to which rheumatism leads. The doctor can cure the early rheumatism. Why don't they stay cured? Because the sufferers have not stopped or will not stop up the turgid springs whence flow through the arteries from time to time the germs responsible for this disease; they will not have their teeth attended to.

And now as to the complications. The rheumatic heart affections, which occur in at least three-fourths of the cases, and which become more and more serious with each recurring attack of rheumatic fever. The delicate interior surface of the heart, especially the valves, past which the blood must flow, becomes ulcerated and roughened, and the germs from the blood get foothold, producing grave "vegetations."

So that if you have occasion to consult a doctor for heart disturbance his first question will be, "have you had rheumatism?" In like manner may the pericardium (the sac in which the heart lies) suffer; also the heart muscle, undergoing all too often fatty degeneration and weakening of the cardiac walls. And the rheumatic infection oftentimes reaches also, by the blood and lymph channels, the lungs and the pleural mem-

branes, and the nervous system, so that there may follow delirium, coma, convulsions, St. Vitus dance, actual brain inflammation.

I am anxious to add a word here about rheumatism in children, because here, more even than later in life, is the heart damaged; and what more compelling sympathy is there than a white faced, blue lipped, panting child with its heart beating irregularly and tumultuously against its ribs like a frightened bird trying to escape from its cage? During the first four years of life rheumatism is fortunately rare; probably because infants and little children are not so much

## What the Stars Promise for December

**V**ENUS in culmination at the December new moon betokens an event trend for the executive departments of government, with the inauguration of popular policies and a disposition to respond to the public will. This likewise denotes unusual activity in social and aristocratic circles, and happily accords with the coming marriage of President Wilson. There will be other interesting weddings before the close of the month.

Congress meets under a happy disposition of the celestial arbiters, Jupiter rising at the fall of the gavel, with Venus enthroned in the midst of the legislative body. These give assurance of many popular measures becoming law. Mars in the navy quarter in good aspect to the luminaries in the maritime section foreshadows a greater preliminary activity in this than in the military branch of the service.

Advantages are reaped by the post office and by transportation interests in the first half of the month, with some minor casualties thereafter on both land and sea. Building disasters and much loss through fire may be expected in the Far West. The Southern States are pleasantly conditioned socially and industrially, and the cotton growing industry will be particularly prosperous. Our insular affairs give some anxiety,

## How the "Streptococcus Rheumaticus," the Rheumatism Germ, Gets Into the Blood Through Decayed Teeth.

(A)—Cavity in a tooth which has broken through the enamel and is decaying through the soft tooth structure toward the pulp canal.

(B)—The cavity having spread into the pulp canal in the centre of the tooth kills the nerve and fills the tooth with food and germs, which travel up to the neck of the tooth, form abscesses and discharges somewhere in the gum in the form of an ulcer or gum boil. In this way the germ of rheumatism and other germs find their way into the circulation of the blood.

(C) The Same Tooth Thoroughly Cleaned Out, the Root Canal Filled and the Cavity Closed with a Dental Filling. The Matter of Properly and Perfectly Filling the Root Canal is One of Great Uncertainty, and Dentists Seem to Have no Way of Knowing Whether they Have Done a Perfect Job.

The diagrams are from the well-known Ransom & Randolph copyrighted charts, "Seven Stages of Decay."



**Photograph of a Child Who Had Been Invalided from Rheumatism and Swollen Joints, Showing How the Joints, Previously Enlarged, Have Been Reduced. From Dr. R. L. Jones's Book on Rheumatism.**

exposed to cold and germ laden dust; nor have they as yet begun school life, with its crowded rooms, oftentimes foul air, some overtaxing journeys to and fro—perhaps on empty stomachs, or just as often on stomachs containing more than they should of sweets and indigestible pastry. We noted that in mature life men are more rheumatic than women; on the other hand girls suffer more than boys.

After four years, however, the rheumatism incidence rises steadily, and reaches its maximum at ten, though for some years after it is all too frequent.

There are many cases among young adults. The really grave fact is that every case of rheumatism in childhood must be looked upon as a probable case of heart disease. Rheumatic heart disease is indeed the most frequent and the most important of all the heart affections, and forms one of the most serious and anxiety-traght subjects with which specialists in children's diseases have to deal.

Rheumatic heart disease is a direct consequence of the contact of the streptococcus rheumaticus with the cardiac valves, the pericardial sac, and the heart muscle through the coronary arteries, whose office it is to supply the heart muscles with blood. And the hurt is done also by the toxins, the poisons, which those streptococci produce and throw out into the blood.

When we think of factors which predispose children to rheumatism we must consider also heredity; changeable, cold and inclement weather; dust whirling winds (for dust, city dust certainly, contains many germs, the rheumatism germ among them); a clay soil, damp houses. Overcrowding and poor sanitation are weighty considerations, especially in cities and towns, where rheumatic heart disease is commoner than in the country. The paths of infection, so often by way of the tonsils, point also to the congregation of children in schools as a factor. And parents having children with poor health, with catarrhs, diseased tonsils and unhealthy throats (adenoids generally) cannot be too strongly urged to have those abnormal conditions attended to.

Apart from rheumatism many other diseases, more or less serious, may come from infection arising out of unclean mouths and throats—diphtheria, pneumonia, tuberculosis, stomach ulcers, headaches and other neuralgias.

## December 22—The defensive branches of the Government unusually active.

December 28-31—A turbulent period. Storms cause a tie-up in transportation.

Jupiter smiles benignantly during December upon those born in the Fall of 1848, Winter or Spring of 1852, Summer of 1855, Springs of 1856 or 1859, Summers of 1864, 1867, 1869, 1870 or 1877, Winter of 1878, Summer of 1881, Fall of 1886, Winter of 1892, or in 1895; or between the 10th and 15th of January, March, May, July, or November of any year. All their matters will be expedited and many favors extended.

The depressive Saturn surrounds those born in the Fall of 1850, Winter of 1854, Fall of 1856, Spring of 1857, Falls of 1862, 1863, or 1867, Spring of 1869, Fall of 1874, Summer of 1879, Winter of 1880, Summer of 1886, Fall of 1887, or Winter or 1893; or between the 3d and 9th of January, April, July, or October of any year.

Changes, journeys or increased activity if born in the opening days of April, June, October, or December. Be careful of accident, fire, or feverish complaints if born in the third week of February, May, August, or November. Crosses and bereavement for the coming year of life if the natal day occurs on December 10, 11, 13, 14, 26, 27, 28 or 29.